

SODIUM.BISMUTH.TITANIUM.TUNGSTEN OXIDE HAVING INDEFINITE-RATIO PYROCHLORE-TYPE STRUCTURE OF CUBIC SYSTEM AND PRODUCTION THEREOF

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Abstract of JP62230621

PURPOSE: To provide a sodium.bismuth.titanium.tungsten oxide having a specific composition and expected to be useful as an ion-conductive material.

CONSTITUTION: A sodium.bismuth.titanium.tungsten oxide having indefinite-ratio pyrochlore-type structure of cubic system and expressed by general formula $\text{Na}_2\text{xBi}_2\text{yTi}_2\text{zO}_{\text{x}+3\text{y}+2\text{z}+3\text{u}}$ ($\text{x}=0.037\text{-}0.047$; $\text{y}=0.247\text{-}0.260$; $\text{z}=0.632\text{-}0.653$; $\text{u}=0.055\text{-}0.070$; $\text{x}+\text{y}+\text{z}+\text{u}=1$). The oxide can be produced by the following method. (A) Na_2CO_3 or a compound decomposable to Na_2O by heating, (B) Bi_2O_3 or a compound decomposable to Bi_2O_3 by heating, (C) TiO_2 or a compound decomposable to TiO_2 by heating and (D) WO_3 or a compound decomposable to WO_3 by heating are mixed together in a manner to give a composition containing 3.7-4.7mol% Na_2CO_3 , 24.7-26.0mol% Bi_2O_3 , 63.2-65.3mol% TiO_2 and 5.5-7.0mol% WO_3 and the mixture is heated at about 900 deg.C in air.

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